

claims cover all such modifications and variations as fall within the true spirit and scope of this present invention.

What is claimed is:

1 1. A method comprising:
2 forming a microelectromechanical system on a
3 first side of a first semiconductor structure;
4 combining the first semiconductor structure and a
5 second semiconductor structure to form a cavity surrounding
6 said system;
7 forming an opening underneath said system through
8 a second side of said first semiconductor structure; and
9 covering said opening to form an open area under
10 said system.

1 2. The method of claim 1 including surface mounting
2 the first semiconductor structure to the second
3 semiconductor structure.

1 3. The method of claim 2 including defining a solder
2 bump on one of said first and second structures and surface
3 mounting said solder bump to the other of said first and
4 second structures.

1 4. The method of claim 3 including defining a sealed
2 cavity between said first and second structures using said
3 solder bump.

1 5. The method of claim 1 including thinning said
2 first semiconductor structure.

1 6. The method of claim 5 including forming said
2 opening from said second side of said thinned first
3 semiconductor structure underneath said system.

1 7. The method of claim 6 including covering said
2 opening with a plastic film.

1 8. The method of claim 1 including forming on said
2 first side of said first semiconductor structure a film
3 bulk acoustic resonator over said opening.

1 9. The method of claim 7 including forming on said
2 first side of said first semiconductor structure a switch
3 over said opening.

1 10. The method of claim 7 including forming on said
2 first side of said first semiconductor structure a
3 transmission line over said opening.

1 11. A device comprising:
2 a first structure having front and back sides;
3 a microelectromechanical system formed on said
4 front side of said first structure;
5 a second structure bonded to said first structure
6 by surface mount connection;

7 a cavity surrounding said system between said
8 first and second structures; and
9 an open area in said first structure under said
10 system.

1 12. The device of claim 11 including a cover over
2 said back side of said first structure closing said open
3 area.

1 13. The device of claim 12 wherein said cover is
2 adhesively secured to said first structure.

1 14. The device of claim 12 wherein said cover
2 includes a plastic film.

1 15. The device of claim 11 including a solder bump on
2 one of said first and second structures surface mounted to
3 the other of said first and second structures to form a
4 hermetic cavity between said first and second structures.

1 16. The device of claim 11 wherein said system is a
2 film bulk acoustic resonator.

1 17. The device of claim 11 wherein said system is a
2 switch.

1 18. The system of claim 11 wherein said system is a
2 transmission line.

1 19. The device of claim 11 wherein said second
2 semiconductor structure is formed of glass.

1 20. The device of claim 19 including contacts which
2 make an electrical connection to said system and extend
3 through said second structure, said contacts including a
4 surface mount bump.

1 21. A device comprising:
2 a first semiconductor structure having front and
3 back sides;
4 a microelectromechanical system formed on said
5 front side of said first structure;
6 a second structure bonded to said first structure
7 by a surface mount connection, said connection including a
8 solder bump that defines a hermetic cavity between said
9 first and second structures surrounding said system;
10 an open area in said first structure under said
11 system; and
12 a film applied to the back side of said first
13 semiconductor structure forming said open area between said
14 first semiconductor structure and said film.

1 22. The device of claim 21 wherein said film is a
2 plastic film.

1 23. The device of claim 22 wherein said film is
2 adhesively secured to said back side.

1 24. The device of claim 21 wherein said first and
2 second structures are semiconductor structures.

1 25. The device of claim 21 wherein said second
2 structure is an insulator.

1 26. The device of claim 25 wherein said second
2 structure is glass.

1 27. The device of claim 26 including an aperture
2 through said second structure said aperture being filled by
3 a solder bump that extends completing through said second
4 structure.

1 28. The device of claim 21 wherein said system is a
2 film bulk acoustic resonator.

1 29. The device of claim 21 wherein said system is a
2 switch.

1 30. The system of claim 21 wherein said system is a
2 transmission line.